

Growing Pains – The Western Water Story

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KEYWORDS: Master Planning, Sustainability, Climate Change.

1 Introduction

Western Water is one of Victoria's thirteen urban water corporations, providing water, sewerage and recycled water services to 69,371 properties, 160,339 residents and across an area of 3,000 km². It services part of north-western metropolitan Melbourne including the towns of Melton, Sunbury and Bacchus Marsh.

Melbourne is experiencing a period of sustained growth. As the city expands to the north and west, outer suburban areas such as Melton and Sunbury will see their populations treble, placing a huge demand on the water supply. This growth forecast presents major challenges for affordability, systems, capability and capacity.

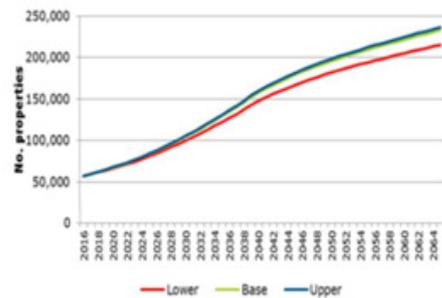


Figure 1: Population Growth Prediction

The impacts of climate change on supply and demand also needs to be considered, which was evident during the millennium drought and floods of 2010/11. It is anticipated similar extreme events will be experienced on a more frequent basis, the effects of which need to be factored into long-term water supply planning.

2 Methods

The challenge presented by growth and climate change requires an integrated response. Risks need to be managed: business as usual asset management and planning will simply not meet these challenges. There is a clear need to understand and articulate the inter-relationships and dependencies between strategies developed at state, water supplier and local level and how these should be reflected in long term Integrated Master Planning.

At a State level, the Government has developed Water for Victoria, which sets the long-term vision and direction for managing Victoria's water resources.

Western Water has responded with a number of targeted activities, including three complementary workstreams:

- Western Water – Urban Water Strategy.
- Western Water & Community Forums – Integrated Water Management Strategy.
- Western Water – Grid Expansion Project.



Figure 2: An Integrated Response

Western Water's Urban Water Strategy aligns with the vision outlined in Water for Victoria and sets out a 50-year plan for an integrated water supply system and water resource management for its service region.

Complementary to the Urban Water Strategy, Western Water has also developed an Integrated Water Management Strategy. This takes an evidence-based approach to utilising and optimising all available water resources, including stormwater and non-potable recycled water to support sustainable communities.

Meeting the objectives in the Urban Water and Integrated Water Management strategies will require significant upgrades. Western Water operates an interconnected water supply network with multiple water sources, operating modes, costs of sources and system capacities. Water security to the region currently relies on the transfer network to move water to where it is needed. A Transfer Network Master Plan and a series of sub-regional Water Master Plans have been developed to determine upgrade requirements, reliability of sources and future operating rules. These projects form part of a wider Water Grid Expansion Project which also includes a Water Acquisition Study, an Environmental Flows (Eflows) Study and an Upstream Impacts Assessment study.

3 Findings and Argument

The Master Plans have identified a series of operational improvements and detail a staged capital investment program that will inform Western Water's next pricing submission. The proposed works will ensure Western Water have a robust and resilient water supply network, capable of meeting the supply demand and climate challenges.

As the optioneering process progressed four "themed" options emerged, and the key stakeholders stressed the need to maintain an "Adaptive Planning" approach. The outcome of the options assessment suggests that whichever of the four short-listed options is preferred, for the next 10-15 years the only viable option is to secure additional water from the Melbourne Water Network, in line with the Urban Water Strategy, and the infrastructure upgrades required to deliver this this should be reflected in the next Water Pricing Submission.

Adopting an Adaptive Planning approach will ensure that Western Water can keep their options open. By identifying the key timings and "triggers" that would prompt investment decisions and a possible significant change in approach, Western Water can meet their immediate Water Pricing Submission requirements and are able to respond to changing political, social, climatic or environmental drivers/indicators and can change direction accordingly in a timely and economically sound manner.

A clear line of sight has been maintained between the capital works proposed and the vision set out in Water for Victoria (and reflected in Western Water's Urban Water Strategy and Integrated Water Management Strategy).

4 Conclusions

Less than 20 years ago, Western Water supplied a number of outer suburban and small towns through a combination of conventional surface and groundwater sources. The millennium drought placed a significant strain on supplies, requiring bulk supply from Melbourne Water, development of recycled water plants and a non-potable transfer network and investment in an inter-connected potable water transfer network.

Within the next 20 years, much of the Western Water service region will effectively become an extension of the Melbourne metropolitan area. Western Water has recognised and responded to the need for a fundamentally different approach to integrated water management for the region.

The active participation of key stakeholders from the bulk supplier Melbourne Water and the Department of Environment, Land, Water and Planning (DELWP) in the Grid Expansion Project, reflects the more collaborative approach essential to tackling the combined challenges of population growth and climate change and to achieve the vision set out in Water for Victoria. This work demonstrates that if you set a clear vision, you can plan effectively for an uncertain future using an adaptive planning approach.